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| 10/803,715 | 03/18/2004 | S. Brandon Keller | 200311735-1 | 6983 |

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| EXAMINER |
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LAM, NELSON C

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| ART UNIT | PAPER NUMBER |
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2825

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/803,715 | Applicant(s) KELLER ET AL. | |
| | Examiner Nelson Lam | Art Unit 2825 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 14-17, 19-22, 27-30 and 32-35 is/are rejected.
- 7) ☒ Claim(s) 5, 10-13, 18, 23-26, 31 and 36-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/18/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Responsive to communication on 03/18/2004. Application 10/803,715 has been examined. In the examination of 10/803,715, claims 1-39 are pending.

Specification

2. The disclosure is objected to because of the following informalities: Applicants are required to provide an updated application status on pending applications (i.e., U.S. Patent Application Serial Numbers need to be stated and U.S. Patent Numbers need to be stated).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-4, 6-9, 14-17, 19-22, 27-30 and 32-35 are rejected under 35 U.S.C. 102(e)** as being anticipated by Broughton et al. (U.S. Patent No. 7,080,365).

As per **claim 1**, Broughton discloses a method for optimizing relationships between logic commands defining a circuit design, the method comprising, for each logic command:

determining whether the logic command is a primitive logic command (Fig. 3, #324; Fig. 4, #401; col. 7, line 46-60; col. 8, line 58 to col. 9, line 13); and

responsive to the logic command not being a primitive logic command, decomposing the logic command into its most primitive form (col. 2, line 14-27; col. 7, line 61 to col. 8, line 2; col. 10, line 5-13).

As per **claim 2**, Broughton discloses the method of claim 1 wherein the decomposing comprises representing the logic command as a combination of primitive logic commands (Abstract; col. 3, line 33-50; col. 7, line 61 to col. 8, line 2).

As per **claim 3**, Broughton discloses the method of claim 2 wherein the combination of primitive logic commands is logically equivalent to the logic command (col. 10, line 5-45).

As per **claim 4**, Broughton discloses the method of claim 2 further comprising replacing the logic command with the combination of primitive logic commands (col. 10, line 5-45).

As per **claim 6**, Broughton discloses the method of claim 1 wherein each primitive logic command comprising a second type of logic command has associated therewith a forbid list comprising a list of nets and corresponding levels thereof that are not permitted to occur (col. 8, line 2-10; col. 13, line 18-34; col. 13, line 41-47).

As per **claim 7**, Broughton discloses the method of claim 1 wherein each logic command is followed by a list of one or more nets to which the logic command is to be applied (col. 8, line 58 to col. 9, line 13; col. 12, line 43-55; col. 13, line 6-17).

As per **claim 8**, Broughton discloses the method of claim 1 wherein the logic command is selected from the group of logic commands consisting of ifthen, forbid, mutex, imutex, and merge_nodes commands (Fig. 15; col. 30, line 37-67; col. 31, line 18-23; where machine operations include ifthen, forbid, mutex, imutex and merge_nodes commands).

As per **claim 9**, Broughton discloses the method of claim 1 wherein each primitive logic command of the combination of more primitive logic commands is selected from a group of logic commands consisting of ifthen and forbid commands (col. 30, line 37-67).

As per **claim 14**, Broughton discloses an analysis tool (col. 4, line 22-37) for optimizing relationships between logic commands defining a circuit design, the tool comprising:

means for determining whether a logic command is a primitive logic command (Fig. 3, #324; Fig. 4, #401; col. 7, line 46-60; col. 8, line 58 to col. 9, line 13); and

means responsive to the logic command not being a primitive logic command for decomposing the logic command into its most primitive form (col. 2, line 14-27; col. 7, line 61 to col. 8, line 2; col. 10, line 5-13).

As per **claim 15**, Broughton discloses the tool of claim 14 wherein the means for decomposing comprises means for representing the logic command as a combination of primitive logic commands (Abstract; col. 3, line 33-50; col. 7, line 61 to col. 8, line 2).

As per **claim 16**, Broughton discloses the tool of claim 15 wherein the combination of primitive logic commands is logically equivalent to the logic command (col. 10, line 5-45).

As per **claim 17**, Broughton discloses the tool of claim 15 further comprising means for replacing the logic command with the combination of primitive logic commands (col. 10, line 5-45).

As per **claim 19**, Broughton discloses the tool of claim 14 wherein each primitive logic command comprising a second type of logic command has associated therewith a forbid list comprising a list of nets and corresponding levels thereof that are not permitted to occur (col. 8, line 2-10; col. 13, line 18-34; col. 13, line 41-47).

As per **claim 20**, Broughton discloses the tool of claim 14 wherein each logic command is followed by a list of one or more nets to which the logic command is to be applied (col. 8, line 58 to col. 9, line 13; col. 12, line 43-55; col. 13, line 6-17).

As per **claim 21**, Broughton discloses the tool of claim 14 wherein the logic command is selected from the group of logic commands consisting of ifthen, forbid, mutex, imutex, and merge_nodes commands (Fig. 15; col. 30, line 37-67; col. 31, line 18-23; where machine operations include ifthen, forbid, mutex, imutex and merge_nodes commands).

As per **claim 22**, Broughton discloses the tool of claim 14 wherein each primitive logic command of the combination of more primitive logic commands is selected from a group of logic commands consisting of ifthen and forbid commands (col. 30, line 37-67).

As per **claim 27**, Broughton discloses a computer-readable medium (Fig. 1, #117; col. 3, line 1-30) operable with a computer for optimizing relationships between logic commands defining a circuit design, the medium having stored thereon:

computer-executable instructions for determining whether a logic command is a primitive logic command (Fig. 3, #324; Fig. 4, #401; col. 7, line 46-60; col. 8, line 58 to col. 9, line 13); and

computer-executable instructions responsive to the logic command not being a primitive logic command for decomposing the logic command into its most primitive form (col. 2, line 14-27; col. 7, line 61 to col. 8, line 2; col. 10, line 5-13).

As per **claim 28**, Broughton discloses the computer-readable medium of claim 27 wherein the computer-executable instructions for decomposing comprises computer-executable instructions for representing the logic command as a combination of primitive logic commands (Abstract; col. 3, line 33-50; col. 7, line 61 to col. 8, line 2).

As per **claim 29**, Broughton discloses the computer-readable medium of claim 28 wherein the combination of primitive logic commands is logically equivalent to the logic command (col. 10, line 5-45).

As per **claim 30**, Broughton discloses the computer-readable medium of claim 28 further having stored thereon computer-executable instructions for replacing the logic command with the combination of primitive logic commands (col. 10, line 5-45).

As per **claim 32**, Broughton discloses the computer-readable medium of claim 27 wherein each primitive logic command comprising a second type of logic command has associated therewith a forbid list comprising a list of nets and corresponding levels

thereof that are not permitted to occur (col. 8, line 2-10; col. 13, line 18-34; col. 13, line 41-47).

As per **claim 33**, Broughton discloses the computer-readable medium of claim 27 wherein each logic command is followed by a list of one or more nets to which the logic command is to be applied (col. 8, line 58 to col. 9, line 13; col. 12, line 43-55; col. 13, line 6-17).

As per **claim 34**, Broughton discloses the computer-readable medium of claim 27 wherein the logic command is selected from the group of logic commands consisting of ifthen, forbid, mutex, imutex, and merge_nodes commands (Fig. 15; col. 30, line 37-67; col. 31, line 18-23; where machine operations include ifthen, forbid, mutex, imutex and merge_nodes commands).

As per **claim 35**, Broughton discloses the computer-readable medium of claim 27 wherein each primitive logic command of the combination of more primitive logic commands is selected from a group of logic commands consisting of ifthen and forbid commands (col. 30, line 37-67).

Allowable Subject Matter

5. Claims 5, 10-13, 18, 23-26, 31 and 36-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: In a method for optimizing relationships between logic commands the prior art

does not teach a first type of primitive logic command associated with an if1list (if0list) comprising a list of nets and a corresponding logic level.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Lam whose telephone number is 571 272-8318. The examiner can normally be reached on Monday-Friday from 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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SUPERVISORY PATENT EXAMINER